

Remarks

Applicants acknowledge the allowance of claims 26 through 28.

Reconsideration of the present application in view of the foregoing amendments and the following remarks is respectfully requested.

The present invention provides an apparatus and method which can accumulate different types of individual articles. Generally stated, the apparatus includes a delivery device which provides an initial-plurality of an initial-type of individual articles, and at least a first-accumulator mechanism which is automated to provide a first-plurality of a first-type of individual articles. The first-type of articles differ from the initial-type of articles, and the first accumulator mechanism includes a first metering drum. At least a first-transport-device moves the first-plurality of articles to a first packing location; and an automated assembly mechanism is configured to operatively combine the first-plurality of articles with the initial-plurality of articles. In a method aspect, a method for accumulating different types of individual articles includes delivering an initial-plurality of an initial-type of individual articles, and automating a first-accumulator to provide a first-plurality of a first-type of individual articles. The first-type of articles differs from the initial-type of articles, and the automating of the first-accumulator includes delivering the first-type of individual articles with a rotatable metering drum. The first-plurality of articles are moved to a first packing location and operatively combined with the initial-plurality of articles by employing an automated assembly mechanism. In particular aspects, the metering drum is tilted to move the articles down stream through the metering drum from an entry end to an opposite exit end; and the first-accumulator includes a stationary plate member located operatively adjacent the exit end of the first metering drum, and positioned relatively downstream from the metering drum to help prevent articles from falling out from the bottom-side of the drum while allowing the drum to rotate past the stationary plate. Further aspects of the invention are set forth in the specification and claims.

Claims 1-3, 11-13 and 21-25 (SIC, 22-25) have been alleged to be unpatentable under 35 U.S.C. § 103 over U.S. Patent 6,658,813 to Clay (Clay) in view of U.S. Patent 5,771,858 to Olson et al. (Olson) and U.S. Reissue 37,405 to Shirodera (Shirodera) and further in view of U.S. Patent 4,984,678 to Fauchard (Fauchard). This rejection is respectfully traversed to the extent that it may apply to the currently presented claims.

Clay discloses combined packages including a plurality of complementary containers. A first such container is a first generally rectangular container that contains a first item and a second such container is a second generally rectangular container that contains a second item that is different from and complementary to the first item. A packaging material at least partially surrounds

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each of the containers, thus holding the container in mutual abutment. A combined package can also include an adhesive between the containers that holds a face of the first container and a face of the second container in mutual abutment. To facilitate palletizing the combined packages, the overall shape of the combined package can be generally rectangular. The first container can have a plurality of faces, each of which is generally coplanar with a respective face of the second container. Apparatus and methods for manufacturing such combined packages are also disclosed.

Olson discloses a packaging apparatus comprising a first infeeder supplying a first stream of articles; a second infeeder supplying a second stream of articles; and a selector having a plurality of spaced flight bars intersecting the first and second article streams at a predetermined angle. The flight bars form a stream of spaced, stacked article groups, each the stacked article group comprising a lower and an upper article subgroup. In a preferred embodiment, the continuous apparatus for forming and packaging stacked article groups comprises

- (a) a first article infeeder for supplying a first stream of articles in a first travel path;
- (b) a second article infeeder for supplying a second stream of articles in a second travel path;
- (c) an article group selector having a longitudinal third travel path intersecting the first and second article infeeder travel paths at an equivalent angle, the selector having a plurality of spaced, transversely oriented and fixed flight bars intersecting the first and second article streams, the flight bars forming a stream of spaced, stacked article groups, each the stacked article group comprising a lower and an upper article subgroup;
- (d) means to deposit a divider member between the upper and lower article subgroups;
- (e) a carton supplier having a longitudinal fourth travel path parallel to the selector travel path, the carton supplier forming a stream of cartons with open ends facing the article groups on the selector; and
- (f) a continuous side loading mechanism having a plurality of loader heads fixed at spaced intervals on endless means disposed about a plurality of drive/idler means, the loader heads being synchronized to contact and move a stacked article group on the selector to a carton on the carton supplier, the loader heads, endless means and drive/idler means being constructed and arranged to form a sloping face whereby the loader heads approach the stacked article groups at an angle and continuously contact the stacked article groups while moving transversely and longitudinally.

Recognizing that a combination of Clay and Olson would not teach Applicants' claimed invention, the Examiner has relied on a further combination with Shirodera and Fauchard.

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Shirodera discloses a parts feeder for conveying a succession of parts in a common posture, includes: a rotary drum rotatable about its substantially horizontal axis of rotation and having on its inner circumferential wall surface a plurality of radial plates circumferentially spaced at predetermined distances; a chute in the form of an elongated plate substantially horizontally extending from an inside to an outside of the rotary drum through an outlet and having a guide portion along its upper edge; a vibrator supporting the chute for vibrating the chute longitudinally; a remover disposed adjacent to the guide portion for removing any of the parts if it is abnormal in posture while being conveyed on the guide portion of the chute; and the guide portion having a parts-supporting cross-sectional shape gradually varying from an inner end of the chute outwardly toward the outlet of the rotary drum.

U.S. Patent 4,984,678A to Fauchard describes a device for the separation and alignment of objects of the packages, parcels or similar kind, including a conveyor for the parcels brought in bulk to the inlet and for discharging the same parcels separated and aligned at the outlet, which includes at least one truncated cone opened at its ends, driven continuously in rotation about its axis which is inclined with respect to the horizontal and which includes in its inner surface a set of helical wings, axially offset with respect to one another and extending when taken together over at least one complete turn of the truncated cone, the parcels introduced at the upper end of smaller diameter at the inlet of the truncated cone being discharged at its lower end of larger diameter at its outlet.

A proper combination of Clay, Olson, Shirodera and Fauchard, however, would not disclose or suggest an apparatus or method in which a first accumulator mechanism includes a rotatable metering drum with the configurations called for by Applicants' currently presented claims. To the contrary, Shirodera at Col. 3, lines 36-52 states:

The rotary drum 10 is in the form of a cylinder having at one end a bottom plate 11 and at the other end a ring-shape inner flange 12. The rotary drum 10 has on its inside wall a plurality of plates 13 extending radially toward and parallel to its axis of rotation and spaced circumferentially from one another at a predetermined angular distance. Each of the radial plates 13 is a rectangular plate having a pair of opposite short sides, one of which is fixed to the bottom plate 11 and the other left free. The rotary drum 10 is rotatably arranged so as to be inclined by a predetermined angle with respect to the horizontal in such a manner that the side of the bottom plate 11 is at a lower side and the side of the inner flange 12 is at an upper side. With the rotary drum 10 thus inclined, the locking members 2 inside the rotary drum 10 come together to the side of the bottom plate 11 by themselves so that an adequate quantity of the locking members 2 to be fed can be secured by the individual radial plate 13. (emphasis added)

Thus, Shirodera teaches that the bottom plate 11 and inner flange 12 are part of the rotary drum 10, and that the bottom plate and flange rotate with the drum. The drum taught by Shirodera also has

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its radial plates 13 spaced away from the exit end of the drum. Additionally, the drum taught by Shirodera is not arranged with an entry end and an opposite exit end, and is not tilted to move the articles down stream through the metering drum from the entry end and out of the opposite exit end, as called for by the claimed invention.

Fauchard teaches a differently configured drum which has a set of helical wings within the drum, and is configured to move articles from an open entrance end to an open exit end. A proper combination of Fauchard, Shirodera and the other cited references, however, would provide no motivation or suggestion to make the distinctive changes needed to synthesize the configurations called for by Applicants' presented claims. Indeed, a person of ordinary skill would conclude that the drum taught by Shirodera would not work in the arrangements taught by Fauchard because the drum bottom taught by Shirodera would block the operation of the arrangements desired by Fauchard. Similarly, a person of ordinary skill would conclude that the open-ended drum structures taught by Fauchard would be unsuitable for the arrangements desired by Shirodera because the open ends would undesirably allow the articles to escape from the bottom of the drum.

Accordingly, a proper combination of the teachings of Clay, Olson, Shirodera and Fauchard would not disclose or suggest a configuration wherein the metering drum is tilted to move the articles down stream through the metering drum from an entry end and out of an oppositely located exit end, as called for by the currently presented claims. Additionally, a proper combination of the teachings of Clay, Olson, Shirodera and Fauchard would not disclose or suggest a configuration wherein the first-accumulator includes a stationary plate member located operatively adjacent the exit end of the metering drum, and positioned relatively downstream from the metering drum to help prevent articles from falling out from the bottom-side of the drum while allowing the drum to rotate past the stationary plate, as called for by the claimed invention. A proper combination of Clay, Olson, Shirodera and Fauchard would also fail to teach an arrangement having at least one lug member in the configurations called for by particular claims of Applicants.

As a result, the arrangements taught by a proper combination of Clay, Olson, Shirodera and Fauchard would be less able to provide a desired control of the flow of articles. The arrangements taught by Clay, Olson, Shirodera and Fauchard would also be less able to provide a desired throughput capability and would be less able to inhibit excessive clogging.

It is, therefore, readily apparent that none of Clay, Olson, Shirodera, Fauchard or any proper combination thereof would disclose or suggest the invention called for by Applicants' currently presented claims. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 are respectfully requested.

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Claims 7, 8, 10, 17, 19 and 20 have been alleged to be unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 6,658,813 to Clay (Clay), U.S. Patent 5,771,658 to Olson et al. (Olson), U.S. Reissue 37,405 to Shirodera (Shirodera), U.S. Patent 4,984,678 to Fauchard (Fauchard) in view of U.S. Patent 3,311,216 to Jones (Jones). This rejection is respectfully traversed to the extent that it may apply to the currently presented claims.

Jones discloses an automatic egg handling apparatus which includes egg conveying means feeding random eggs to an egg accumulator means that includes distributor means that supplies eggs to grouping or row forming means. Downstream of the egg row forming means is row advancing means, egg row realignment means, and egg transfer means to depositor means by Applicants' currently presented claims.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 are respectfully requested.

The Examiner has withdrawn dependent claims 4-6 and 14-16 from consideration. In view of the amendments, however, it is submitted that these claims are also in form for allowance.

For the reasons stated above, it is respectfully submitted that all of the currently presented claims are in form for allowance. Accordingly, reconsideration and withdrawal of the rejections, and allowance of the currently presented claims are earnestly solicited.

Please charge any prosecutorial fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

The undersigned may be reached at: 920-721-2435.

Respectfully submitted,

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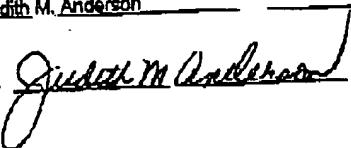
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